



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105-3901

**OFFICE OF THE
REGIONAL ADMINISTRATOR**

The Honorable John McCain
United States Senate
Russell Senate Office Building, SR-218
Washington, DC 20510-0303

Dear Senator McCain:

Thank you for your November 6, 2017, letter to EPA Administrator Scott Pruitt regarding EPA's efforts to address abandoned uranium mines (AUMs) on and near the Navajo Nation. EPA Region 9 is leading these efforts, and thus, I was asked to respond to you. Enclosed please find responses to the specific questions you posed. In addition, we would like herein to provide a broader overview of the significant work we're undertaking.

Since 2008, EPA has led multiple efforts to assess and mitigate human health risks from AUMs using both appropriated funds and enforcement funds. We performed radiological surveys at an estimated 1,100 structures on the Navajo Nation, remediating 51 contaminated structures and providing safe drinking water to over 3,000 families. We completed screening investigations at all known AUMs on the Navajo Nation and used this data to prioritize 523 AUMs and support enforcement efforts. This screening led to nine AUM cleanup projects. EPA has also made significant investments through grants and contracts to encourage the participation of Navajo government agencies and Navajo-owned businesses in our projects to assess and clean up AUMs.

To date, we have obtained 12 settlements and enforcement agreements for 219 AUMs. Of these, the 2014 Tronox settlement and the 2017 Cyprus Amax and Western Nuclear settlement are valued at approximately \$1.7 billion. The resources obtained through these efforts represent significant support for cleaning up AUMs, though much remains to be done. Over 300 uranium mines are not covered by the existing agreements and as a result presently lack funding. We are exploring ways to address the risks associated with all AUMs on the Navajo Nation. Additional details regarding our enforcement efforts are described in the enclosed fact sheet.

We are working with BIA, IHS, NRC and DOE to develop a Ten-Year Plan of goals, objectives and milestones to guide future cleanup work. This document will be available to Congress next year. We are working closely with EPA Region 6 on Tronox mines in New Mexico in proximity to the Navajo Nation.

I very much appreciate your continued interest in our work to address the legacy of uranium mining and its impact on the Navajo Nation. Consistent with Administrator Pruitt's Superfund

Task Force recommendations, we are committed to an efficient Navajo AUM cleanup process and to effectively engage potentially responsible parties (PRPs) wherever possible.

We welcome the opportunity to brief you or your staff regarding our work on the Navajo Nation. If I can provide any information on the work we're doing on the Navajo Nation, or anywhere in the State of Arizona, please call me at (415) 972-3572 or refer staff to our Congressional Liaison, Brent Maier, at (415) 947-4256.

Sincerely yours,

 8 Dec. 2017
Alexis Strauss
Acting Regional Administrator

Enclosures

cc: President Russell Begaye, Navajo Nation
Sam Coleman, EPA Region 6
April Gil, DOE

Enclosure: Response to November 6, 2017 Senator John McCain Letter

1. How many mines have been remediated to date?

Initial clean-up actions have been performed at the following nine sites. These activities range from fencing and stabilization of mine waste to consolidation of mine waste in interim repositories.

- **Mariano Lake** – Chevron, under an order from EPA, fenced the mine site and paved the perimeter roads that were contaminated to stop potential human contact with mine waste.
- **Ruby No. 1 and No. 3** – Western Nuclear, under an order from EPA, closed adits and vent holes at these two mine sites to reduce the potential for human contact with mine waste.
- **Northeast Church Rock** – United Nuclear, under orders from EPA, removed approximately 40,000 cubic yards of contaminated soil from the community and consolidated it in an area off the reservation, pending construction of a repository at a nearby mill site.
- **Quivira Mine Site 2010** – Rio Algom, under an order from EPA, stabilized and fenced the mine site to stop potential contact with mine waste.
- **Quivira Mine Site 2012** – Rio Algom, under an order from EPA, removed approximately 17,000 cubic yards of contaminated soils from a road through the community, stabilized mine waste slopes, and fenced the mine site to stop potential human contact with mine waste.
- **Quivira Mine Site 2017** - Using Tronox settlement money, EPA removed an additional 11,000 cubic yards of contaminated soils near mine ventilation shafts located in the community.
- **Section 32** – EPA, using Tronox settlement money, excavated and stabilized 34,600 cubic yards of contaminated soil to stop potential human contact with mine waste.
- **Skyline** – EPA, using appropriated funds, consolidated 25,000 cubic yards of uranium mine waste from the valley floor and mine portal into an interim repository located at the top of a mesa near the mine.

2. What steps will EPA be taking to address groundwater contamination at the sites of Sanders, AZ and the Tuba City Dump?

Sanders, AZ: Due to concerns that the 1979 UNC mill tailings spill and mine dewatering may be affecting water quality in Sanders, Arizona, EPA is conducting a literature review and synthesis of all pertinent historic documentation to evaluate if existing data and studies indicate a connection between the Northeast Church Rock Mine and elevated uranium in groundwater in and around Sanders. EPA will share this report with the Navajo Nation, Arizona Department of Environmental Quality, and other stakeholders. The review is scheduled to be completed in the spring of 2018.

Since April 2016, Sanders residents have been provided with a new source of drinking water that meets all federal drinking water standards, including uranium. Water from the Navajo Tribal Utility Authority (NTUA) – New Lands public water system is currently serving all customers of the former Arizona Windsong public water system, whose wells have been taken off line by ADEQ. The NTUA – New Lands water system is tested for radionuclides (which includes uranium) on a regular basis as required by the Navajo Safe Drinking Water Act and its implementing regulations. No elevated levels of uranium have ever been detected in the NTUA – New Lands public water system.

The Sanders Unified Elementary School has installed a treatment plant to address uranium in its drinking water source. ADEQ was in attendance during the treatment plant start-up in June 2017 to evaluate operational startup procedures and the treatment process. The school will continue to provide bottled water to students and faculty until ADEQ has determined the treatment plant is fully operational.

The Sanders Unified Elementary School water system, previously classified as a non-transient non-community water system by ADEQ, was re-classified by ADEQ in 2015 as a community water system given the full-time residential housing that is also served by the school water system. As a community water system, it is now required to monitor for uranium and other radionuclides on a prescribed frequency.

Tuba City Dump: In 2017, the U.S. Bureau of Indian Affairs (BIA) completed a remedial investigation and feasibility study, pursuant to a consent order between EPA and BIA. The Tuba City Dump (TCD) was operated by BIA as an open municipal waste dump from the 1950s until 1997. It covers more than 30 acres; 95% on Hopi Tribal land and 5% on Navajo Nation land. Both the Hopi Tribe and Navajo Nation were involved during the investigation process.

The Remedial Investigation concluded:

- Shallow groundwater is not usable due to natural contamination.
- The deeper groundwater is clean and not affected
- Drinking water from wells and springs is safe and is not affected by the dump
- No uranium waste was found in the dump

Solutions proposed in the Feasibility Study include:

- Permanently covering the dump in place
- Consolidating and covering waste on the reservation
- Hauling the waste away to a permitted solid waste disposal facility

EPA has paid special attention to how the alternatives might address the sovereign needs of the tribes and how a proposed remedy might rectify the historic mismanagement of the dump. We are now in the process of evaluating a final clean-up alternative and obtaining public input.

3. Will EPA be addressing former uranium processing sites on the reservation?

The Department of Energy is responsible, under the Uranium Mill Tailings Radiation Control Act of 1978 (UMTRCA), for long-term surveillance and maintenance at the four former uranium processing sites located on the Navajo reservation.

4. In July 2017, EPA issued its Superfund Task Force Recommendations, which call for more emphasis on remediation over protracted studies. Will any of those recommendations be applied to the cleanup efforts on the Navajo reservation?

Yes. Region 9 is following the recommendations:

- **Goal 1 Expediting Cleanup:** We are prioritizing rapid risk reduction by selecting priority sites that represent the greatest threat and performing initial cleanup actions that reduce exposure and risk. The program has adopted a flexible approach of using both remedial and removal authority to ensure risk is addressed in all areas of the reservation impacted by uranium mines.
- **Goal 2 Responsible Party Cleanup:** We have obtained a series of settlements with responsible parties, providing funding to address 219 of the 523 mines on and near the Navajo Nation (see attached factsheet enclosure).
- **Goal 4 Redevelopment and Revitalization:** We are carefully considering options to allow reuse of the affected land and working with local chapters to coordinate cleanup activities in areas where use and development of the land is of interest (i.e., Former Bennett Freeze impacted Chapters Cameron, Coalmine Mesa, Bodaway Gap, Cove and Red Valley Chapters).
- **Goal 5 Partners and Stakeholders:** In addition to consultation (one or more a year) with the President of the Navajo Nation, we have standing weekly meetings where we interact with the Navajo Nation Environmental Protection Agency, Navajo Nation Department of Justice, and Navajo Nation Abandoned Mine Lands. We also meet several times a year with several agencies from Navajo Nation and the State of New Mexico, and the Region 6 Superfund program to discuss mine clean-up projects located in western New Mexico and part of the Tronox settlement. EPA also holds calls and meetings with various levels of the Navajo government.

We have cooperative agreements in place with the following Navajo programs:

- Navajo Nation EPA Superfund Program
- Navajo Nation Abandoned Mine Lands Program
- Dine College

These agreements allow for the Navajo Nation to have regulatory, technical, and academic involvement in the uranium clean-up process. To ensure the Navajo communities are informed on the progress of EPA work, community involvement plans have been developed to ensure all stakeholders have an opportunity to provide input on a regular basis. We have three community involvement staff fluent in the Navajo language.

5. Are there any offers to conduct remediation by “primary responsible parties” of the abandoned mines that EPA has not yet acted on?

We have acted on all offers by potentially responsible parties to conduct remediation at Navajo abandoned uranium mines. We continue to search for additional potentially responsible parties to pay for assessment and cleanup of uranium mines. To date, over \$1.7 billion is available to begin the cleanup process at 219 mines, more than 40% of the abandoned uranium mines on or near the Navajo Nation. This includes a recent settlement with Cyprus Amax and Western Nuclear for assessment and cleanup of 94 mines, a nearly \$1 billion Tronox settlement for 34 mines on Navajo Nation, and settlements with 11 other potentially responsible parties. This also includes the Phase 1 and 2 Navajo Abandoned Uranium Mine Environmental Response Trust settlements between the U.S. and the Navajo Nation for 46 “orphan” mines without potentially responsible parties. The Phase 2 Trust also includes funds to conduct two water studies at “orphan” mines, and up to \$800,000 for the Navajo Nation to assess natural resource damages. Potentially responsible parties may not be available for all of the remaining mines, and thus additional federal funding may be needed to address the risks present at the mines.



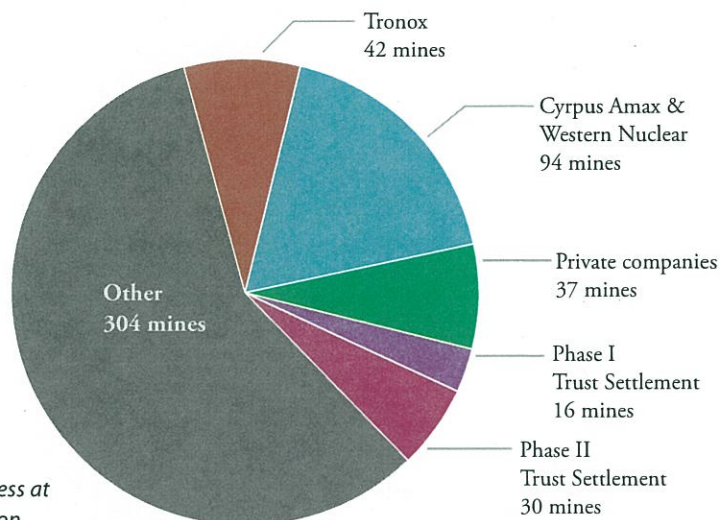
U.S. Environmental Protection Agency
Pacific Southwest Region 9

NAVAJO NATION

Abandoned Uranium Mine Settlements

75 Hawthorne Street, San Francisco, CA 94105

The U.S. Environmental Protection Agency (USEPA) has entered into enforcement agreements and settlements valued at over \$1.7 billion to reduce the highest risks of radiation exposure to the Navajo people from abandoned uranium mines (AUMs). As a result, funds are available to begin the assessment and cleanup process at 219 of the 523 abandoned uranium mines. The settlements are part of a larger strategy to address AUMs on and near the Navajo Nation. The table below provides information on the separate enforcement agreements and settlements to address abandoned uranium mines on Navajo Nation.



Over \$1.7 billion is now available to begin the assessment and cleanup process at 219 mines, about 40% of the abandoned uranium mines on the Navajo Nation.

Tronox Settlement

When Tronox, a successor to Kerr-McGee, filed for bankruptcy in 2009, USEPA and the Navajo Nation, among others, filed claims and received settlements in the bankruptcy. The U.S., on behalf of USEPA and other agencies, then filed a lawsuit against Anadarko, another successor of Kerr-McGee, seeking additional funding for the AUMs. The U.S. and others involved ultimately achieved a \$5 billion national settlement in 2014, of which USEPA received almost \$900 million for cleanup of more than 50 AUMs associated with Kerr-McGee including the 42 mines on or near Navajo Nation. In addition, USEPA received close to \$90 million for the Quivira mine. The funds allocated to USEPA are mandated by the court to be spent to address designated abandoned uranium mines. The Navajo Nation received \$44 million.

Cyprus-Amax and Western Nuclear Consent Decree (Settlement)

The U.S. on behalf of USEPA and other federal agencies entered into a historic settlement with Cyprus Amax and Western Nuclear in 2017 for the cleanup of 94 mines on the Navajo Nation. The settlement requires Cyprus Amax and Western Nuclear to perform the work. Private parties typically hire contractors to do the work for them.

The United States will pay approximately half of all costs, including USEPA and the Navajo Nation Environmental Protection Agency oversight costs, through a trust funded at \$335 million. Cyprus Amax and Western Nuclear will fund the other half of the work. This settlement has an estimated value of \$600 million.

Enforcement Agreements with private companies¹

¹ Babbitt Ranches, BNSF, Chevron, El Paso Natural Gas, Homestake, United Nuclear Corporation, EnPro Holdings

USEPA has entered into enforcement agreements with 7 parties to assess contamination or take other removal actions at 37 AUMs, and to install interim safety measures such as fencing and signage. Private parties typically hire contractors to do the work for them. Each agreement varies in scope and dollar amount for the work, but USEPA intends to follow up with agreements for cleanup as necessary. USEPA funds the Navajo Nation Environmental Protection Agency oversight of these agreements via grants.

Ongoing efforts include identifying the companies responsible for AUMs in this region and engaging them to assess and clean up the mines.

Phase I Trust Settlement

The U.S. and the Navajo Nation reached an agreement for the U.S. to fund assessment of 16 priority AUMs on the Navajo Nation. The U.S. funded a trust in the amount of \$13 million in 2015. A trustee administers the trust by hiring contractors to perform the work. The agreement provides for payment of USEPA and the Navajo Nation Environmental Protection Agency oversight costs. Both agencies received an initial amount of \$400 thousand.

Phase II Trust Settlement

The U.S. and the Navajo Nation reached a second agreement in 2016 for the U.S. to fund another trust for cleanup of the 16 priority mines assessed under the first agreement, and to evaluate 30 more AUMs located across the Navajo Nation. The trust will also fund groundwater and surface water studies at two mines. The trust will be administered by a trustee, who typically will hire contractors to perform the work. The agreement provides for payment of USEPA and the Navajo Nation Environmental Protection Agency oversight costs. The trust has been initially funded for over \$8.5 million.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

DEC 18 2017

OFFICE OF
CONGRESSIONAL AND
INTERGOVERNMENTAL
RELATIONS

The Honorable Bill Shuster
Chairman
Subcommittee on Water Resources and Environment
Committee on Transportation and Infrastructure
U.S. House of Representatives
Washington, D.C. 20515

Dear Chairman Shuster:

Enclosed please find the U.S. Environmental Protection Agency's responses to the Subcommittee's questions for the record following the November 2, 2017, hearing "Emergency Response and Recovery: Central Takeaways from the Unprecedented 2017 Hurricane Season."

I hope this information is helpful to you and the members of the Subcommittee. If you have further questions, please contact me or your staff may contact Carolyn Levine in my office at levine.carolyn@epa.gov or (202) 564-1859.

Sincerely,

A handwritten signature in black ink, appearing to read "Troy Lyons", is written over the typed name.

Troy M. Lyons
Associate Administrator

Enclosure

**U.S. Environmental Protection Agency
Responses to Questions for the Record
Committee on Transportation and Infrastructure
Subcommittee on Water Resources and Environment
Hearing on
“Emergency Response and Recovery: Central Takeaways from the
Unprecedented 2017 Hurricane Season”
November 2, 2017**

Submitted on behalf of Representative Blake Farenthold (TX-27)

- 1. Can you tell me how much from the Environmental Protection Agency’s (EPA’s) budget is going to help the U.S. Geological Survey 3D Elevation Program (USGC 3DEP)?**
 - a. If none, could the EPA’s mission as connected to emergency response and recovery be aided by enhanced elevation data from 3DEP?**

Response: The EPA is not involved in this project, nor do we fund it. Elevation data is not needed for EPA’s current emergency response to Hurricanes Irma and Maria in the Caribbean. In the future, enhanced elevation data would certainly assist in planning both response and recovery efforts and evaluating location and resiliency of critical infrastructure. The EPA works with FEMA on using their models to determine the areas of the U.S. Caribbean where coastal/inland storm surge and flooding from a rain event may occur. The EPA uses that model as part of its facility assessment plan.

Submitted on behalf of Ranking Member Peter DeFazio (OR-04)

Superfund

- 1. What activities did EPA undertake at the Superfund sites on Puerto Rico and the U.S. Virgin Islands prior to the arrival of Hurricane Irma and Maria?**

Response: EPA Region 2 did field assessments of all Superfund and oil sites in Puerto Rico and the U.S. Virgin Islands prior to Irma and had just finished re-assessing all Superfund sites and all but two of the oil sites again when Hurricane Maria arrived.

The two sites not yet assessed when Maria hit were the Guayanilla Bay oil site in Puerto Rico and the Cruz Bay Oil Tank site in St. John, U.S. Virgin Islands. For the Guayanilla Bay oil site in Puerto Rico, which has a sub-surface oil plume that has discharged oil through a storm sewer line in the past, an in-person inspection that had been planned for

September 18, 2017, was postponed due to preparations for Hurricane Maria. For the Cruz Bay Oil Tank site in St. John, U.S. Virgin Islands, the EPA had assessed via overflights, but had not yet gained access before Maria hit. The site involves an oil storage tank where the oil has been removed with the exception of oil sludge in the bottom of the tank. The tank was damaged during Irma but overflights of the area did not show any oil spills from the site. EPA worked with FEMA and the U.S. Navy to gain access to the site and pump the tank to provide more capacity for future rainfall. The remaining oil in the tank bottom will be removed and the tank dismantled once access to St. John has improved.

- a. **For example, we are aware that EPA took active steps to secure Superfund sites in New Jersey and New York prior to the arrival of Hurricane Sandy in 2012. Did EPA take any active steps to secure Superfund sites in a similar manner in advance of Hurricanes Irma and Maria?**

Response: EPA conducted pre-assessments of the 34 Superfund and oil sites (30 in PR and 4 in USVI) prior to Hurricane Irma and had nearly completed post-Irma assessments when Hurricane Maria hit. The assessments prior to Irma included site visits and discussions with responsible parties to ensure that all that could be done to secure the sites was done. In general, "active steps" were not necessary to secure Superfund sites prior to the hurricanes because most of the Superfund sites are groundwater contamination sites, with minimal surface structures that would pose a contamination risk. Given the number of Superfund sites in the path of the hurricanes, the site remedies proved resilient as the hurricanes caused relatively limited damage at these sites. The Administration requested \$3.5 million for Superfund in its November 17, 2017, supplemental funding request to address damage to tanks, monitoring wells, aeration towers, and caps at certain sites in Puerto Rico and the U.S. Virgin Islands.

- b. **Is EPA monitoring and sampling in and around those Superfund sites to ensure that there are no off-site impacts caused by storms?**

Response: EPA has completed all on-site assessments of Superfund and oil sites in Puerto Rico and the U.S. Virgin Islands. While some damage was found as mentioned in response to the previous question, no sites showed evidence of off-site releases of chemicals.

It should be noted that the only sites where EPA took samples in the aftermath of Hurricane Sandy were sites that had contaminated material that may have moved to areas where people could be exposed. The EPA sampled mud around three sites with contaminated sediment (Gowanus Canal in Brooklyn, Newtown Creek on the Brooklyn/Queens border, and the Passaic River Superfund site). This sampling was to determine if heavily contaminated sediments from these sites moved into residential areas (they had not). A fourth site, Raritan Bay Slag, was sampled to determine if lead contaminated sand had shifted into playground and other accessible areas (some

shifting had occurred). EPA received supplemental funds (Public Law 113-2) to address the additional damage from the Raritan Bay Slag site following Hurricane Sandy.

c. Will EPA post all monitoring and sampling results at those sites online for the public to see just as EPA did after Hurricane Sandy in 2012?

Response: Yes, where sampling data are available. Because none of the sites in USVI and Puerto Rico were damaged in a way that could spread contamination, sampling at these sites was not needed. Most sites in the Caribbean are groundwater sites, where surface conditions have little or no impact, and many have little or no above-ground equipment.

The EPA did sample some spigots at the Dorado site, which is detailed below. The final validated data for this testing is available on EPA's Hurricane Maria website (www.epa.gov/hurricane-maria).

2. According to multiple press reports, people accessed wells at the Dorado Superfund site for drinking water in the aftermath at the story. Did EPA take any steps prior to Hurricanes Irma and Maria to ensure that the Dorado Superfund site was secure and that no one would be able to access these wells for drinking water?

Response: Residents did not access contaminated wells at the Dorado site. It is impossible to access water from the contaminated wells at the site because the pumps are disconnected. The contaminated wells were within locked, fenced enclosures, with posted warning signs instructing people not to enter the enclosures. There were no necessary additional steps that the EPA needed to take prior to the hurricanes.

Co-located with the contaminated wells are spigots that can deliver water from the PRASA public distribution system. These spigots are not connected to the contaminated wells themselves. After Hurricane Maria, some residents entered the enclosures and drew water from these spigots. Some of the fencing and warning signs were damaged. EPA promptly repaired the fences and re-posted the signs. Additionally, EPA tested the water from the spigots to confirm that the water was from the PRASA public water itself, which is subject to regular testing and oversight from the Puerto Rico Department of Health.

3. What has EPA done to ensure that wells at the Dorado Superfund site aren't used for drinking water in the future? For example, has EPA capped/disabled those wells that were being accessed for drinking water after Hurricane Maria after EPA became aware of their use? Why didn't EPA take those steps prior to the arrival of Hurricanes Irma and Maria?

Response: Initial reports of people drawing water from contaminated wells at the Dorado site were incorrect. The pumps in the contaminated wells have been disabled for some time, and water cannot be drawn from these wells.

There are a number of wells on the Dorado site, including two wells (Nevarez and Santa Rosa) used by PRASA intermittently to provide drinking water. These two wells have historically met drinking water standards and they are tested regularly by PRASA and the Puerto Rico Department of Health. These wells did not show TCE or PCE contamination above drinking water standards when EPA tested in 2015 as part of its effort to place the site on the Superfund list. Regular testing by Puerto Rico Department of Health and PRASA has not shown levels above drinking water standards since that time. These wells are included in the Dorado site as a precaution as we examine the nature and extent of the contaminated groundwater within the designated geographic area.

When EPA received reports that people might be drinking from the contaminated wells at the Dorado site, we immediately investigated. There was understandable confusion when people obtained drinking water from spigots near some of the contaminated wells. These spigots are distinct from the wells themselves, and do not draw water from those wells. They instead draw water from a treated water system. However, to be absolutely certain, the EPA took samples from these spigots, as well as from the spigots at the two wells used intermittently by PRASA to provide water. These samples are being analyzed and compared to Safe Drinking Water Act standards for about 90 contaminants.

In the interim, EPA worked with FEMA and the U.S. Army Corps of Engineers to provide bottled water from water tankers to meet local demand for potable water. Some of the validated data is in and the results so far show that water from the spigots meets drinking water standards for microbial contaminants and volatile organic compounds, including the two main contaminants of concern at the Dorado site – TCE and PCE. The EPA has set standards for TCE and PCE, along with many other contaminants, which are applied to drinking water systems across the U.S. The validated results for VOCs and microbial contaminants are available on EPA's Hurricane Maria website. Further validated data for the rest of the suite of drinking water contaminants is expected in mid-December. EPA will post that data to its website.

Water and Wastewater

- 1. Your prepared testimony noted that EPA had assessed more than 5,000 drinking water systems and nearly 1,200 wastewater systems in response to Hurricanes Harvey, Irma, and Maria.**
 - a. Does EPA plan to make the results of these assessments publicly available online?**

Response: The EPA established websites for all three hurricane responses (links to each are found on EPA's home page) which include information about the agency's response efforts, including drinking water and wastewater, as well as news releases which have provided regular updates for the public.

In terms of the agency's response to Hurricane Maria, the number of operating drinking water and wastewater systems has fluctuated, particularly due to power outages. The water quality test results EPA has are from tests that EPA has independently conducted separate from the testing conducted by the Puerto Rico Department of Health at the Dorado Superfund site. EPA also has been conducting drinking water system sampling on behalf of the U.S. Virgin Islands Department of Health. EPA's drinking water sampling in the USVI is to determine if a system has microbial contamination and should be disinfected. Contaminated systems are being addressed immediately. The data from the USVI is field data and it is not validated lab data that is typically posted. The validated data to date from the Dorado site is posted on the Hurricane Maria response website (www.epa.gov/hurricane-maria).

In the U.S. Virgin Islands, all eight wastewater treatment plants were operational as of November 30, 2017. Of the 30 wastewater pump stations, two are not operational. In the USVI, many people obtain their drinking water from small cisterns and some systems run by the utility use cisterns. As of November 30, 2017, about 90 of the 344 drinking water systems run by the USVI utility and nine of the 191 systems not run by the USVI public utility are out of service. EPA has taken over 1,931 samples from drinking water system in the USVI to identify possible microbial contamination. Where such contamination has been found, the information is provided to the U.S. Virgin Islands Department of Health, which follows up with the systems to ensure that they are disinfected. EPA then works with VIDOH to conduct follow up confirmatory sampling.

In Puerto Rico, as of December 15, 2017, one of the 51 wastewater treatment plants are not operational and 76 of the 714 wastewater pump stations are not operational. Serious problems remain with pump stations and sewer trunk lines in Puerto Rico. EPA is working with the Puerto Rico Aqueduct and Sewer Authority, as well as with the U.S. Army Corps of Engineers and FEMA to address the issues.

In Puerto Rico, one of the 115 drinking water plants are out of service as of December 15, 2017. Most issues are related to lack of primary power and generator failures.

- b. Similarly, the testimony also noted that, in the U.S. Virgin Islands, more than 700 drinking water samples were taken. Does EPA plan to make the results of these assessments publicly available online?**

Response: The EPA has taken well over 1,300 samples of water from drinking water systems in the U.S. Virgin Islands, mostly in cistern systems. These samples are tested for microbial contamination to determine which systems need to be disinfected. These

results are given to the U.S. Virgin Islands Department of Health, and they have been following up to ensure that the systems are disinfected. When a problem is identified, it is relatively easy to fix using a bleach solution. The samples are analyzed in the field and are intended for the USVI government to identify which systems need to be disinfected, rather than to assess the quality of the system's drinking water, so they are not included with data on the website.

2. **We are concerned about the status of the 59 wastewater treatment facilities on Puerto Rico and the U.S. Virgin Islands. In particular, we are concerned that the offline wastewater treatment facilities are allowing untreated sewage to contaminate the rivers and streams on Puerto Rico, some of which are being used as drinking water sources.**

- a. **Please provide an update on the status of these systems.**

Response: In Puerto Rico, as of November 27, 2017, three of 51 wastewater treatment plants are not operational and about 89 of the 714 pump stations are not operational. These numbers have fluctuated and continue to fluctuate due to power and equipment failures. There remain serious problems with pump stations and trunk lines in Puerto Rico. The EPA is working with the Puerto Rico Aqueduct and Sewer Authority, the U.S. Army Corps of Engineers and FEMA to address the issues. Major repair works have been completed for the trunk sewers of the Cayey, Corozal, and Comerio wastewater treatment plants, as well as cleanups of drinking water intakes in many facilities. Where there has been a risk of sewage overflows and reports of residents using the surface waters for bathing or drinking, EPA has coordinated with the Centers for Disease Control and the Puerto Rico and Virgin Islands Departments of Health to warn individuals of the health risks associated with using surface waters for those purposes.

- b. **Is EPA giving priority to restoring those wastewater treatment plants that are upstream of drinking water intake systems?**

Response: EPA facilitated the creation of a priority list – which prioritizes wastewater treatment system issues, especially pump stations, that could impact drinking water intakes. The U.S. Corps of Engineers and FEMA have been working with the Puerto Rico government to address these problems.

- c. **Given the increasing severity and frequency of these storms caused by climate change, is EPA taking any steps to increase the resiliency of these systems to ensure that they can remain online during future storm events?**

Response: The Puerto Rico Aqueduct and Sewer Authority, Puerto Rico Environmental Quality Board, and the U.S. Army Corps of Engineers have lead responsibility for wastewater infrastructure. EPA provides assessment assistance and advice for prioritization of repairs. There are restrictions on spending Stafford Act funds to re-build

infrastructure. FEMA generally advises that funding is limited to building back what was there before that storm. That said, EPA and federal agencies have historically worked together to find ways to introduce resilient approaches in communities using funds other than Stafford Act funding. For example, EPA has worked with FEMA and local NGOs to get some solar power to run some of the Non-PRASA drinking water systems. Funding may also be available for these purposes through the Clean Water and Drinking Water State Revolving Funds (SRFs) and other EPA grant programs.

General

- 1. Puerto Rico has more than three million residents and the U.S. Virgin Islands has just over 100,000 people. However, it is our understanding that as of mid-October there were approximately 65 EPA regional personnel on the U.S. Virgin Islands and only 116 personnel on Puerto Rico.**

- a. Given that the population of Puerto Rico is 30 times the size of the U.S. Virgin Islands, how does EPA justify its personnel placement in its post-storm response?**

Response: The EPA deploys its resources according to the particular needs of the relevant phase of the response, not in proportion to population. As of November 27, 2017, the EPA had about 125 people in the USVI and about 150 in Puerto Rico. These numbers fluctuate depending on the operational needs. The EPA expects to ramp up its personnel in both USVI and Puerto Rico as the debris management and household hazardous waste missions get into full swing during December. In addition to the staff deployed to Puerto Rico and the U.S. Virgin Islands, the EPA has about 94 staff supporting the response from its Regional Emergency Operations Center, which ensures that the staff on the ground in Puerto Rico and the U.S. Virgin Islands get what they need to support their work and that fresh staff is cycled in to ensure continuity.

- b. Taking into account the severity of the damage that Puerto Rico experienced, are there sufficient EPA personnel on the ground to adequately respond to the need?**

Response: Yes. The EPA has pulled emergency response staff and other experts from every regional office and from our D.C. offices. While the agency has had four major responses in the past several months, we have been able to staff up to appropriate levels with the support of FEMA and Stafford act funding. EPA's work is in concert with other agencies, such as the local government agencies, the U.S. Coast Guard, US Army Corps of Engineers and of course FEMA. EPA staff attend to specific missions and may not be reflective of collective federal agency engagement for storm response.